

ABSTRACT OF THE DISCLOSURE

In a piezoelectric transducer, first piezoelectric ceramic layers are laminated on second piezoelectric ceramic layers, which are placed over an array of ink channels. In the first piezoelectric ceramic layers, two areas defined, corresponding to each ink channel, by a column of positive electrodes and two columns of negative electrodes are polarized symmetrically in a direction perpendicular to the laminating direction. In the second piezoelectric ceramic layers, each area defined by positive and negative electrodes are polarized parallel to the laminating direction. Upon the application of a voltage between the positive and negative electrodes in the first and second piezoelectric layers, corresponding to a selected ink channel, the two polarized areas in the first piezoelectric ceramic layers extend in the ink channel array direction while each polarized area in the second piezoelectric ceramic layers contracts in the ink channel array direction. Such a bimorph deformation increases the volume of the ink channel.